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will help us to evaluate our progress in meeting both these objectives. The next issue of the newsletter will bring more information on where we are with this effort.

The supplier members who attend the meetings regularly have been anxious to find ways to reach the vast majority of suppliers who don't find their way to these festive gatherings. We need to make sure that we are addressing the needs of those who don't have a voice at our face-to-face sessions. To that end, I again ask for suggestions for future articles, articles written by suppliers, and details of helpful experiences that can be shared with the rest of the NDT community.

I hope to see you in Indianapolis in July, but if you can't make the meeting, send your thoughts, ideas, and/or concerns to a member of the Task Group or one of the Staff Engineers. Have a great summer!

Phil Keown, NDT Task Group Chair  
[philip.keown@ae.ge.com](mailto:philip.keown@ae.ge.com)

### From the Chair...

The world as we know it is changing. This prolific statement refers not to the obvious, sometimes frightening and life-altering changes we hear of each day in the media, but to the attitude changes so eloquently displayed in the recent issues of the Nadcap NDT Newsletter. Those who have taken the time to review the last few issues have seen articles by suppliers offering advice to their fellow NDT sources on how best to benefit from the Nadcap process. Prime representatives have presented items of clarification, trying to let everyone know what is meant by, and how best to comply with, the many requirements being flowed down. And, more people are seeing the "doing more with less", so utilizing all of our collective resources becomes more imperative.

The NDT Task Group is also finalizing the new checklists, detailing the baseline requirements and the Prime specific appendices. The current plan is to pilot the checklists to ensure that they are "user friendly", cover the major topics and do not significantly impact the time of the audit. A major focus of this initiative is not just to "level the playing field", but to eliminate a lot of the non-value added questions. These pilot audits

### 2004 Meeting Schedule

Please note the remaining meeting schedule, and meeting places, for 2004, which are accurate as of the printing of this Newsletter. We post this here in hopes that you may work one or two meetings into your schedule and budget.

July 19 – 23      Indianapolis, IN  
Oct 25 – 28      Pittsburgh, PA

The NDT Task Group will be scheduling the July Open Meeting for Monday afternoon & all day Tuesday and Wednesday.

Agenda details can be found on the PRI Nadcap website  
<http://www.pri-network.org/Nadcap>

For more information on future meetings, please contact Mark Aubele, NDT Senior Staff Engineer.  
[maubele@sae.org](mailto:maubele@sae.org)

# What is the NANDTB?

## Definition:

Firstly, the NANDTB is the acronym for the 'National Aerospace Non Destructive Testing Board'. NAS 410 rev 2 and EN 4179:2000 define the NANDTB as follows:

"An independent national aerospace organisation representing a nation's aerospace industry that is chartered by the participating prime contractors and recognised by the nation's regulatory agencies to provide or support NDT qualification and examination services in accordance with NAS 410/EN 4179", (from here in referred to as "this standard").

"When used, the NANDTB shall administer procedures for qualification and certification of NDT personnel according to the requirements of this standard. It is entitled, in conjunction with the employer, to recognise equivalencies of qualification and certification, and may be requested to provide general guidelines in accordance with this standard, regarding facilities for NDT training, course outlines, examination questions and exam procedures".

## Background:

The International Committee for Non-Destructive Testing (ICNDT), has a document in place known as ISO 9712 (Non-Destructive Testing – Qualification and Certification of Personnel), which define guide lines to be followed. The European Federation of Non-Destructive Testing utilise two documents to comply with ISO 9712, they are EN 473 and EN4179.

EN473 is for the Qualification and Certification of NDT Personnel – General Principles, this applies to all sectors e.g. Aerospace (multi-sector), Pre and In-service Inspection, Railway, Tubes & Pipes, etc. This is a Central Certification system e.g. Certification granted by a body or organization.

EN4179 is for the Qualification and Certification of NDT Personnel and applies also to the Aerospace sector. The only difference being that this system is employer based e.g. Certification granted by the employer.

Each of the European Federation members has a central certification system in place such as COFREND (Confederation Francaise pour les Essais Non Destructifs) for France, DGZfP (Deutsche Gesellschaft fur Zerstorungsfreie Prufung) for Germany and PCN (Personnel Certification in Non-Destructive Testing) for the UK.

To best explain how the NANDTB works, the author has chosen to discuss the NANDTB utilised in France which is a well established system. France, as with other central certification systems to EN473 contain sector specific committees looking after foundries, railways, steel product, industrial and aerospace. The French central certification system as indicated in the previous paragraph is known as COFREND, the aerospace sector under the umbrella of COFREND is known as COSAC,

which is the NANDTB for France.

## NANDTB - France

COSAC is the acronym for COmité Sectoriel Aerospaciale de Certification. COSAC was created in 1979, made up of the French aerospace primes and major sub-contractors, charged to organise Level I, II and III examinations in all the aerospace NDT methods, which include PT, MT, UT, RT, ET, LT and to be added later Thermography testing and Interferometric testing. To administer these examinations, there are five examination centres located through out France. The general and specific examination questions are written and approved by the aerospace primes who sit on the committee. The practical examination specimens are supplied, defects mapped and marking schedules generated by the primes who sit on the committee. To ensure the qualification is transferable through out the aerospace sector the candidate is given a variety of specimens in order to satisfy the "specimens shall be representative of the product to be encountered" requirement within NAS410 & EN4179. Specimens will range from structures, welds, forgings, castings and machined components, specific to the aerospace industry. The NANDTB will ensure the candidate meets all the requirements of experience, eyesight and training prior to the examinations, oversight performed by primes who are nominated and qualified as examiners (examiners being qualified as level III's and have passed the practical level II examination). The examiners mark the papers and practical examinations and set up the certificates of qualification. The entire NANDT board is controlled by the primes, this ensures that each candidate examined has met the full requirements of EN 4179/NAS 410. In addition all candidates are examined to the same standard and requirement.

## Auditing a Supplier Where a NANDTB is Mandated:

Where an NANDTB is used, it alleviates the Nadcap auditor from reviewing examination papers as these are held and controlled by the NANDTB. NDT training may also be carried out under the control of the NANDTB therefore the NANDTB are responsible for the approval of the training facility and the detailed course outline.

Note: Some primes however do not accept the use of the NANDTB.

For questions or more information, please contact Phil Ford, NDT Staff Engineer: [phil.ford@pri-europe.org.uk](mailto:phil.ford@pri-europe.org.uk) or Yves Esquerre, Airbus Task Group Member, [yves.esquerre@airbus.com](mailto:yves.esquerre@airbus.com)

## NDT Qualification and Certification Standard Globalization

The NDT global community is once again coming closer together in regards to aligning NDT requirements. In

this case it is with the certification and qualification requirements of NDT personnel. With the last revision of NAS 410 and EN 4179 a global effort was made to harmonize these two standards. The end result was that NAS 410, Revision 2 and prEN 4179, Edition P3 are now both technically equivalent in regards to content. This was a significant undertaking and was accomplished as of the result of a lot of hard work from those involved.

How does this consolidation of requirements impact you, you ask? Well, that will depend on your customer base. Most Nadcap subscribing aerospace primes are now flowing down one or both of these revised standards. However, as a Supplier, before fully implementing these changes check with your respective prime representatives that your company does work for. When you review one of these revised standards, you will quickly see that there have been significant changes made to the formal training and recertification requirements. If you have any interpretation questions, with either of these two revised standards, please forward them to your applicable Nadcap NDT Staff Engineer, who will then forward the questions to the applicable standard custodian.

For questions or more information, feel free to contact D. Scott Sullivan, NDT Task Group Quality Systems Method Chair at: [David.S.Sullivan@rolls-royce.com](mailto:David.S.Sullivan@rolls-royce.com)

## ***The Supplier Perspective – Initiatives for Improvement***

Have you ever noticed, during portions of our meetings you can almost always hear similar input suggestions and comments from multiple suppliers trying to voice their opinions, although necessary it can at times reflect a lack of coordination.

In preparation for the April meeting in France, one of the NDT Staff Engineers suggested I gather the supplier input on the baseline checklist to present and discuss for those that could not be present.

While attending the April NDT open Task Group meeting the idea of collective input seemed the right approach. Following the meeting the Task Group Chair made positive comments and fully supported the supplier's efforts in this area. The suppliers then gathered to review the progress, deciding to continue this approach with a structured program of which the benefits are perceived to bring;

- **Improve Feedback on the Nadcap Checklist** - Issues regarding Nadcap checklists can be discussed prior to the quarterly Nadcap meetings to develop a collective, well thought out proposed solution for the issue rather than just raising it as a problem needing resolution. This feedback can then be presented to the Task Group either during the quarterly meetings or added to subsequent meeting agendas.
- **Training/Commonality of Understanding** - Some "issues" may not become issues at all, once the group exchanges ideas and achieves a common understanding of the requirement.

- **Streamline Task Group Meetings** - Issues (along with proposed solutions) that are identified by the collective supplier base can be presented in an organized fashion for review by the Task Group. If managed correctly, there should be little discussion except for questions by primes to improve their understanding of the issue.
- **Improve the Nadcap Process** - The Nadcap process improves for everyone. Suppliers play a more active role and have more "buy in" opportunities to the Nadcap process, with Primes witnessing the overall improvement / standardization in supplier NDT processes.
- **Orientation of Suppliers New to the Nadcap Process** - This group would serve the same purpose as the current "Buddy System" but be more specific to the NDT process and associated checklist requirements.
- **Model for the Entire Nadcap Program "Sharing Best Practices"** - Development and Implementation of the NDT methodology may be considered by other commodities as part of 'sharing best practices'.

For the above reasons, a number of NDT suppliers have expressed an interest to pursue the idea which is currently under discussion within the SSC arena.

Having the structured system could add value, a couple of examples;

1. During the Toulouse meeting the subject surfaced about one of our facilities having a major finding in NDT for not complying to a unique customer-mandated method of backscatter radiation monitoring. The method requires two different lead letters; however the standard approach is to use the lead letter "B" as defined in most standards. This would have required us to use three lead letters to satisfy this customer.

The above issue was discussed in the presence of the task group and further to clarification and agreement from the Prime involved, the issue was resolved.

2. Another positive aspect about the output of the Toulouse meeting was the affirmation from the Chair and Staff Engineers of the suppliers request to attend the auditor training scheduled for October.

It is believed this to be critical for suppliers to have the same understanding and direction as the auditors have before they enter our businesses.

With these things happening, it would seem as though the Nadcap process is further striving to reduce customer audits and increase value.

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## Failed Compliance Data

Did you know that during a Nadcap NDT audit, compliance jobs that fail during the audit are communicated immediately to the Primes. This communication is in the form of a failed compliance notification template that contains the audit #, auditor, method, part #, part description and reason for failure. The reason for this communication is to inform the Primes of a potential impact on hardware issue that need to be addressed immediately by the supplier and on occasion requiring the assistance of the Prime. Since 2000 onwards the data has been presented in different formats to the Task Group without effectively illustrating trends for the Task Group to address. During the April meeting in Toulouse, the failed compliance data was presented in a different format which allows the monitoring of compliance data. Based on the data available, the Task Group agreed this information should be available on the Nadcap website for all to see. Staff is currently working on making this information available, so keep your eye on the website ([www.pri-network.org](http://www.pri-network.org))

For questions or more information, please contact Jim Bennett, NDT Staff Engineer: [bennet@sae.org](mailto:bennet@sae.org)

## Systemic NCR's

What if, identified during an audit, a suppliers NDT written practice did not comply with the requirements of NAS410 Rev 2 for the following reasons:

- Does not address the responsibility of the level 3.
- Level 1 practical examination does not specify that a minimum of two parts shall be processed.
- Training hours for Penetrant Inspection are incorrect.
- Re-training and re-examinations are not addressed.

What do you think the problem is?

Some questions that need to be asked:

- Why does the procedure not meet the requirements?
- Do I fully understand my customer?
- Are procedure's reviewed effectively?
- Does the level 3 review & approve the procedure?
- Is my interpretation correct?
- Is my "in-house" specification flow down system effective?
- Do I receive timely specification updates from my provider?

The list goes on, this is just one example of many that PRI find as a non-compliance with procedural issues that need to address the systemic issue.

Two common responses received at PRI from suppliers who do not understand the problem are as follows:

"We had one of our Primes audit our facility and they did not indicate this as a problem".

"Last years PRI auditor did not pick this up".

Although these issues may be the case, they do not justify why the supplier's procedure does not meet the requirements. This should not become a "Catch me if you can" type scenario.

On the flip side to all this, a number of suppliers address this in a positive sense and improve their system to prevent these issues from recurring. The "proof of the pudding" is when re-accreditation takes place, i.e. zero non-sustaining NCR's relating to procedural review / control.

To that end, if you address the "bigger picture" now, you are less likely to have problems at a later stage which may necessitate the raising of a non-sustaining NCR and / or Prime Customer intervention.

For questions or more information, please contact Jim Bennett, NDT Staff Engineer: [bennet@sae.org](mailto:bennet@sae.org)

### **Editorial Note - Suppliers**

The NDT Newsletter is not just a means of communicating the word according to the NDT Task Group or individual Primes. It is an excellent tool for the supplier network to communicate issues sharing best practice and experiences with others. These newsletters reach a wide variety of people worldwide, so take this opportunity and communicate. If you have any articles you wish to be included in the NDT Newsletter, please forward to Jim Bennett ([bennet@sae.org](mailto:bennet@sae.org)).